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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,165	04/29/2005	Michael Hohne	22204-100571	9284

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EXAMINER

WONG, TINA MEI SENG

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/533,165

Applicant(s)

HOHNE ET AL.

Examiner

Tina M. Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 5-7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04/25/2005 04/29/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Priority

Receipt from the International Bureau is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) in this national stage application, which papers have been placed of record in the file.

Drawings

The drawings are objected to because:

The drawings filed with this application on 29 April 2005, are objected to as being informal. Notice that all the figures (Figures 1-7) are hand drawn and the labels on all the figures are handwritten. Correction is required in response to this office action.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,913,245 to Grossman.

In regards to claim 1, Grossman discloses a multilayered sensor (Figures 1-4) through which an optical waveguide (30) is passed, the optical waveguide being arranged so that in the event of the external application of force, the force acts on the optical waveguide.

In regards to claims 2 and 3, Grossman discloses the optical waveguide to be arranged such that it is bent or deformed by an external application of force. (Column 5, Lines 10-15) Furthermore, Grossman also discloses the multilayered sensor being spirally wound by an external force (Figure 13), where the waveguide would be bent and deformed in the wound position for storage.

In regards to claim 4, Grossman discloses the multilayered sensor to have a structure (Figure 3) in which the optical waveguide (30A) is contained, the structure consisting of a front layer (4) and a rear layer (16), which transmit the external application of force directly on to the optical waveguide. (Column 5, Lines 10-15)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent 5,913,245 to Grossman as applied to claim 1 above.

In regards to claim 8, Grossman discloses all discussed above and further discloses a first layer (28) through which the optical waveguide (30) is passed and a second layer (4) which abuts the first layer. (Figure 3) But Grossman fails to specifically disclose the first layer to have a greater compressibility than the second layer. However, Grossman does disclose "suitable values of flexibility and compressibility can be determined by those skilled in the art by conventional engineering and development procedures." Furthermore, it would be desirable for the first layer to have a greater compressibility than the second layer since the force/pressure is applied directly to the first layer to deform the fiber in order to more easily obtain the amount of force/pressure applied. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the first layer to have a greater compressibility than the second layer.

In regards to claim 9, Grossman discloses all discussed above and further discloses a third layer (16), where the first layer (28) is disposed between the second (4) and third (16) layer. But Grossman fails to specifically disclose the third layer to have a lower compressibility than the first layer. However, Grossman does disclose "suitable values of flexibility and

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compressibility can be determined by those skilled in the art by conventional engineering and development procedures.” Furthermore, it would be desirable for the third layer to have a lower compressibility than the first layer in order to protect the waveguide from bending too far, past the bending radius of the waveguide, causing damage to the waveguide. By choosing a layer with a lower compressibility, this can be prevented. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the first layer to have a lower compressibility than the first layer.

In regards to claim 10, Grossman discloses the waveguide (303 & 304) to be passed through the sensor (76 & 78) at least twice. (Figure 12)

In regards to claim 11, Grossman shows (Figure 9) the optical waveguide (58) to be passed through the sensor (60 & 62) in a wave-like configuration. In Figure 9, it can be seen that the waveguide is weaved through the monofilaments and threads to form a wave-like configuration.

Allowable Subject Matter

Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose or reasonably suggest all of the limitation of the base claim (claim 1), any intervening claims (claim 4) and more specifically for the multilayered sensor to further include clips and ribs to guide the optical waveguide. Although Grossman discloses monofilaments, threads and adhesive to hold the optical waveguide, Grossman does not disclose clips and ribs to guide the waveguide. Grossman does not suggest a need for the

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waveguide to be guided in the multilayered sensor, since the waveguide inserted in the Grossman sensor is weaved through the threads and monofilaments and then held by an adhesive. Another close prior art of record is U.S. Patent 4,725,125 to Taylor. Taylor also discloses an optical waveguide sensor that deforms when a force/pressure is applied. Taylor further discloses teeth in the layers of the sensor. However, the purpose of Taylor's teeth is to perform the bending of the optical waveguide and not for guidance purposes.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References B and C both discuss alternative configurations of optical waveguides and fibers in pressure sensors. None of the documents cited by the Examiner discloses or reasonably suggests the allowable subject matter discussed above.

The documents submitted by applicant in the Information Disclosure Statement have been considered and made of record. Note attached copy of form PTO-1449. None of the documents submitted by Applicant discloses or reasonably suggests the allowable subject matter discussed above.

Inventorship

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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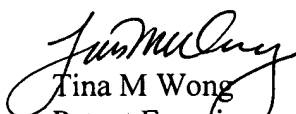
invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Wong whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Tina M Wong
Patent Examiner